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ANNOTATIONS ON HERBARIUM SHEETS

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It is now generally recognized that a species is an abstract mental concept, synthesized from the structural characters of various individual plants. To this concept is given a binomial name. The same binomial, when written on a herbarium sheet, does not indicate the name of the individual plant there displayed, but the concept under which the individual is placed. The assignment of the individual to a certain concept constitutes identification.

The original synthesis of a specific concept dates back to the first description of the species, while the name under which this concept is known can not be earlier than 1753. In the casual identification of plants, botanists accept without question the concept of earlier students, learning it from printed descriptions or from comparison with specimens bearing the appropriate name. In monographic study botanists form concepts of their own. If these concepts coincide with earlier ones, in the opinion of the student, the original idea is continued; if not, new species or subspecies are proposed or two or more concepts united under a single name. All botanists know how specific concepts vary, partly through accumulation of material for study and partly through mere change in mental attitude.

The name which appears on a herbarium sheet represents the opinion of some person. It may have been placed there by a skilled botanist who has given years to the study of this particular group, or by one who has given the plant only the most casual or perfunctory

examination. It is obvious that a grass, collected by a high school student and labeled *Panicum praecocius*, is of far less value in illustrating that specific concept than if it were so identified by Hitchcock and Chase, who described the species originally. The high school boy may be right, and Hitchcock and Chase may conceivably be wrong, but we feel far more confident of the accuracy of identification in the latter case than in the former. Furthermore, an identification by Hitchcock during his first years as a botanist is obviously less reliable than one made at the present time.

In general, the probability that a specimen is correctly identified, that is, that it correctly illustrates a certain specific concept, depends largely on the person making the identification and on the date when it was made. Each person identifying a plant in our reference herbaria should therefore add or have added to the label his name and the date, for example, *det. John Smith, 1932*. If John Smith is a botanist of recognized ability in 1932, his identification will have authority accordingly; if in 1972 he is the leading taxonomist of the world, his identification of 1932 will nevertheless carry relatively little weight.

All large herbaria include numerous sheets on which identifications have been written by persons of authority who can not now be known except through a knowledge of their handwriting. During the course of our own studies we learn to recognize some of these, but we shall make it much easier for those who follow us if we will add to these old annotations such statements as *written by Asa Gray*, or *Martius scripsit*, as I have seen in European herbaria.

The method by which an identification is made is also valuable information. We all realize the difficulty of using printed descriptions only, and we often add to specimens so identified the abbreviation *ex char.* This should always be done. If we assign the name as a result of comparison with other specimens, we should indicate that, and if practicable cite the particular specimens with which comparison was made, since the source material may be incorrectly named. Such a legend as = *type in Herb. Kew.* gives immediate authority to the name, tempered only by the possible question of our ability to make an exact comparison.

While the name on the label may have been written originally by a person without experience or detailed knowledge, it may be correct. Later students of the group, who are able to speak with authority,

recognize the name as correct and pass it without comment. The value of the identification is immediately raised if such persons add their own annotation to that effect, as *confirmed by Gray, 1882*, or *accepted by Bentham, 1867*. I know of specimens in the family Melastomataceae which have certainly been examined successively by Naudin, Triana, and Cogniaux. It would certainly add much to the value of the specimen if each of these masters of the family had indicated his approval of the name.

Most monographs and some floras cite by collector and number the specimens upon which their descriptions are based. Duplicates of these numbers should always mention this citation, as *Cited by Niedenzu, Pflanzenreich 4¹⁴¹: 493*. At the New York Botanical Garden, where many old Brazilian specimens are deposited, sheets are stamped with indelible ink *This number is cited under this name in Flora Brasiliensis*, or, where the original name has been changed, *This number is cited in Flora Brasiliensis as ————*. And of course types, isotypes, cotypes, and topotypes should always be designated, even if the species which they represent are no longer valid.

When dissections are made by a student from herbarium material, and detailed notes and drawing made from them, copies of both should be attached to the sheet whenever possible. In the great majority of cases this will obviate any necessity of further dissection in the future and will help greatly toward keeping the specimen in good condition. Some types in older European herbaria have been nearly destroyed by the inroads of monographers, without any record of their findings being left for the benefit of their successors.

In making annotations, the original label should never be rewritten, obscured, or destroyed. It may have considerable historical value. In my opinion, it makes relatively little difference whether the notes are written on the sheet itself, or on an annotation label which is pinned or pasted to the sheet. Many herbaria have regulations in this respect which can easily be followed.

Most herbaria are generous in lending material to students, notwithstanding the risk of loss or damage in shipment. If we profit by the examination of borrowed material, we should at least try to improve the material by returning it fully annotated.

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